

**APPENDIX A**  
**RECOMMENDED CONTAINERS, HOLDING TIMES, & PRESERVATION**

| ANALYTICAL GROUP   | Soil/Sediment |      |      | Water/Wastewater <sup>1</sup> |                   |                  | Waste |      |      |
|--------------------|---------------|------|------|-------------------------------|-------------------|------------------|-------|------|------|
|                    | Cont          | Pres | Hold | Cont                          | Pres              | Hold             | Cont  | Pres | Hold |
| <b>BIOLOGICAL</b>  |               |      |      |                               |                   |                  |       |      |      |
| Bacteriological*   | --            | --   | --   | B                             | I                 | 6hr              | --    | --   | --   |
| Toxicity, Acute    | --            | --   | --   | CU                            | I                 | 2                | --    | --   | --   |
| Toxicity, Chronic  | --            | --   | --   | CU                            | I                 | 2                | --    | --   | --   |
| <b>INORGANICS</b>  |               |      |      |                               |                   |                  |       |      |      |
| pH*                | 8G            | NA   | --   | --                            | --                | --               | 8G    | NA   | N    |
| Dermal Corrosion   | --            | --   | --   | --                            | --                | --               | 8G    | NA   | N    |
| Flashpoint         | --            | --   | --   | --                            | --                | --               | 8G    | NA   | N    |
| BTU Content        | --            | --   | --   | --                            | --                | --               | 8G    | NA   | N    |
| Ash Content        | --            | --   | --   | --                            | --                | --               | 8G    | NA   | N    |
| Residual Chlorine* | --            | --   | --   | SM                            | NA                | I                | --    | --   | --   |
| Turbidity          | --            | --   | --   | SM                            | I                 | 2                | --    | --   | --   |
| Conductivity       | --            | --   | --   | SM                            | I                 | 28 <sup>11</sup> | --    | --   | --   |
| Temperature*       | --            | --   | --   | SM                            | NA                | I                | --    | --   | --   |
| BOD <sub>5</sub>   | --            | --   | --   | HP <sup>2</sup>               | I                 | 2                | --    | --   | --   |
| Solids Series      | --            | --   | --   | HP                            | I                 | 7                | --    | --   | --   |
| Settleable Solids  | --            | --   | --   | HP                            | I                 | 2                | --    | --   | --   |
| Nutrients (N,P)    | 8G            | I    | NS   | HP                            | S/I               | 28               | --    | --   | --   |
| Chloride           | --            | --   | --   | LP                            | NA                | 28               | --    | --   | --   |
| Ortho-P            | 8G            | I    | NS   | LP                            | I <sup>4</sup>    | 2                | --    | --   | --   |
| Dissolved P        | --            | --   | --   | LP                            | S <sup>4</sup> /I | 28               | --    | --   | --   |
| COD                | 8G            | I    | NS   | LP                            | S/I               | 28               | --    | --   | --   |
| Alkalinity         | --            | --   | --   | LP                            | I                 | 14               | --    | --   | --   |
| Color              | --            | --   | --   | GP                            | I                 | 2                | --    | --   | --   |
| Oil & Grease*      | --            | --   | --   | LG                            | S/I               | 28               | --    | --   | --   |
| Metals             | 8G            | I    | 180  | LP                            | N                 | 180              | 8G    | NA   | 180  |

| ANALYTICAL GROUP           | Soil/Sediment |      |                   | Water/Wastewater <sup>1</sup> |                                   |                    | Waste |      |                   |
|----------------------------|---------------|------|-------------------|-------------------------------|-----------------------------------|--------------------|-------|------|-------------------|
|                            | Cont          | Pres | Hold              | Cont                          | Pres                              | Hold               | Cont  | Pres | Hold              |
| Mercury                    | 8G            | I    | 180               | LP                            | N                                 | 28                 | 8G    | NA   | 180               |
| Metals - TCLP              | 8G            | I    | 360 <sup>12</sup> | LP                            | I                                 | 360 <sup>12</sup>  | 8G    | NA   | 360 <sup>12</sup> |
| Metals - EP                | 8G            | I    | 360 <sup>12</sup> | LP                            | I                                 | 360 <sup>12</sup>  | 8G    | NA   | 360 <sup>12</sup> |
| Cromium VI                 | --            | --   | --                | LP                            | I                                 | 1                  | --    | --   | --                |
| Cyanide                    | --            | --   | --                | LP                            | A <sup>5</sup> /C <sup>6</sup> /I | 14                 | 8G    | NA   | 14                |
| Sulfides                   | --            | --   | --                | LP                            | Z/C <sup>7</sup> /I               | 7                  | --    | --   | --                |
| Sulfates                   | --            | --   | --                | LP                            | I                                 | 28                 | --    | --   | --                |
| Nitrite                    | --            | --   | --                | LP                            | I                                 | 2                  | --    | --   | --                |
| Nitrate                    | --            | --   | --                | HP                            | I                                 | 2                  | --    | --   | --                |
| Hardness                   | --            | --   | --                | LP                            | N                                 | 180                | --    | --   | --                |
| Fluoride                   | --            | --   | --                | LP                            | NA                                | 28                 | --    | --   | --                |
| <b>ORGANICS</b>            |               |      |                   |                               |                                   |                    |       |      |                   |
| VOCs*                      | 2G            | I    | 14                | V                             | H or B <sup>8</sup> /I            | 14/7 <sup>16</sup> | 8G    | NA   | 14                |
| VOCs - TCLP*               | 2G            | I    | 28 <sup>13</sup>  | V                             | I                                 | 28 <sup>13</sup>   | 8G    | NA   | 28 <sup>13</sup>  |
| Extractables <sup>19</sup> | 8G            | I    | 54 <sup>18</sup>  | GG                            | I <sup>9</sup>                    | 47 <sup>17</sup>   | 8G    | NA   | 54 <sup>18</sup>  |
| Extractables - TCLP        | 8G            | I    | 61 <sup>14</sup>  | GG                            | I                                 | 61 <sup>14</sup>   | 8G    | NA   | 61 <sup>14</sup>  |
| Dioxins <sup>20</sup>      | 8G            | I    | 75 <sup>15</sup>  | LA <sup>3</sup>               | I <sup>10</sup>                   | 75 <sup>15</sup>   | 8G    | I    | 75 <sup>19</sup>  |
| Percent Alcohol            | 8G            | I    | NS                | GG                            | I                                 | NS                 | 8G    | NA   | NS                |
| Phenols                    | --            | --   | --                | LA                            | F/S/I                             | 28                 | --    | --   | --                |
| Org Halide (TOX)           | 8G            | I    | 28                | LA                            | S/I                               | 28                 | --    | --   | --                |

#### General Footnotes:

Cont - Container

Pres - Preservation

Hold - Holding Time (days)

\* - Grab sample only, unless indicated a grab or composite is acceptable.

1 - Consult 40 CFR Part 136 Table II. - Required Containers, Preservation Techniques, and Holding Times for latest requirements.

19 - Including pesticides, herbicides and PCBs

20 - Consult local laboratory for most recent dioxin container and preservation requirements.

**Containers:**

- B - Bacteriological container
- CU - Cubitainer: one gallon or 2 gallon
- 8G - 8 oz. widemouth glass (Teflon lid)
- 2G - 2 oz. widemouth glass (Teflon septum lid)
- LP - One liter polyethylene
- GG - One gallon amber glass (Teflon lid)
- V - 40 ml glass (Teflon septum lid)
- SM - Stormore 500 ml polyethylene
- LG - One liter widemouth glass (Teflon lid)
- GP - Gallon polyethylene
- HP - Half-gallon polyethylene
- LA - One liter amber glass (Teflon lid)
- A - 500 ml widemouth amber glass (Teflon lid)
- 2 - Use GP for BOD with multiple parameters
- 3 - Collect 2 sample containers (LA) per sample plus 4 at one location for matrix spike

**Preservatives:**

- A - Ascorbic acid
- B - Sodium bisulfite
- C - NaOH
- H - HCl 50%
- I - Ice (4°C)
- N - 50% HNO<sub>3</sub> (pH < 2.0 S.U.)
- NA - Not applicable
- S - 50% H<sub>2</sub>SO<sub>4</sub> (pH < 2.0 S.U.)
- Z - Zinc acetate
- F - Ferrous Salt
- 4 - Filter on-site
- 5 - Only with residual CL<sub>2</sub>
- 6 - To pH > 12.0 S.U.
- 7 - To pH > 9.0 S.U.
- 8 - With residual CL<sub>2</sub> mix sample in 8 oz. glass container with 8 drops 25% ascorbic acid
- 9 - With residual CL<sub>2</sub> mix sample with 0.008% sodium thiosulfate
- 10 - With residual CL<sub>2</sub> mix sample with 80 mg of sodium thiosulfate per liter

**Holding Times:** in days unless noted otherwise:

- NS - Not Specified
- N - Indefinite
- I - Immediate (within 15 minutes: 40 CFR 136 Table II)
- 11 - Determine on-site if possible
- 12 - 360 days: 180 days to extraction plus 180 days to analysis
- 13 - 28 days: 14 days to TCLP extraction plus 14 days to analysis (7 days if not preserved following extraction)
- 14 - 61 days: 14 days to TCLP extraction, 7 days to solvent extraction, 40 days to analysis
- 15 - Method 8290 specifies 30 days to extraction plus 45 days to analysis
- 16 - 14 days with either acid preservative, 7 days if not preserved
- 17 - 47 days: 7 days to extraction, 40 days to analysis
- 18 - 54 days: 14 days to extraction, 40 days to analysis

**Shipping Note:**

When samples are to be shipped by common carrier or sent through the United States mail, it must comply with the Department of Transportation Hazardous Materials Regulations (49 CFR 172). The person offering such material for transportation is responsible for ensuring such compliance. For the preservation requirements of 40 CFR, Part 136, Table II, the Office of Hazardous Materials, Materials Transportation Bureau, Department of Transportation has determined that the Hazardous Materials Regulations do not apply to the following materials: Hydrochloric Acid (HCl) in water solutions at concentrations of 0.04% by weight or less (pH about 1.96 or greater); Nitric acid (HNO<sub>3</sub>) in water solutions at concentrations of 0.15% by weight or less (pH about 1.62 or greater); Sulfuric acid (H<sub>2</sub>SO<sub>4</sub>) in water solutions at concentrations of 0.35% by weight or less (pH about 1.15 or greater); and Sodium Hydroxide (NaOH) in water solutions at concentrations of 0.08% by weight or less (pH about 12.30 or less). This footnote is wholly reproduced from 40 CFR 136.3, which is definitive.